

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the present application.

Listing of the Claims:

1. (Currently Amended) An active pixel sensor comprising:

~~a substrate;~~

~~a P-well fabricated within said substrate;~~

~~a photoreceptor fabricated within said substrate and outside said P-well;~~

~~an NMOS frame shutter fabricated within the P-well; and~~

~~an active pixel readout for receiving charges from said NMOS frame shutter.~~

2. (Cancelled).

3. (Previously Presented) The active pixel sensor of Claim 1, wherein the frame shutter includes sample and hold and reset circuits.

4. (Previously Presented) The active pixel sensor of Claim 3, wherein the sample and hold and reset circuits comprise NMOS transistors.

5-12. (Cancelled).

13. (Currently Amended) An active pixel sensor comprising:

~~a substrate;~~

~~a P-well fabricated within said substrate;~~

a photoreceptor, wherein the photoreceptor comprises a pinned photodiode;
an NMOS frame shutter ~~fabricated in~~ within said P-well;
and
an active pixel readout circuit for receiving charges from said NMOS frame shutter.

14. (Previously Presented) The active pixel sensor of Claim 13, wherein the frame shutter includes sample and hold and reset circuits, and wherein the pinned photodiode is fabricated within said substrate and outside said P-well.

15. (Original) The active pixel sensor of Claim 14, wherein the sample and hold and reset circuits comprise NMOS transistors.

16-19. (Cancelled).

20. (Currently Amended) An active pixel sensor comprising:
~~a substrate;~~
a P-well ~~fabricated within said substrate~~;
a photoreceptor ~~fabricated within said substrate and~~ outside said P-well;
an active pixel readout circuit, comprising source follower and row select transistors;
and

an NMOS frame shutter comprising sample and hold and reset circuits fabricated within the P-well, wherein the sample circuit is in direct electrical connection to the source follower transistor of the active pixel readout circuit.

21. (Previously Presented) The active pixel sensor of Claim 20 wherein the photoreceptor is a pinned photodiode.

22. (Previously Presented) The active pixel sensor of Claim 20 wherein the sample and hold and reset circuits are NMOS transistors.

23-24. (Cancelled)

25. (Currently Amended) An integrated pixel sensor comprising:

~~a substrate;~~

~~a P-well fabricated within said substrate;~~

~~a photoreceptor fabricated within said substrate and outside said P-well;~~

a frame shutter fabricated in said P-well, said frame shutter comprising a storage node for receiving charges from said photoreceptor and a transistor for sampling charges from said photoreceptor on to said storage node; and

a readout circuit for receiving charges from said storage node and providing a readout signal.

26. (Previously Presented) The integrated pixel sensor of Claim 25, wherein the transistor for sampling charges is an NMOS transistor.

27. (Previously Presented) The integrated pixel sensor of Claim 25, wherein the photoreceptor is a pinned photodiode.

28. (Currently Amended) An integrated pixel sensor comprising:

~~a substrate;~~

~~a P-well fabricated within said substrate;~~

~~a photoreceptor fabricated within said substrate and outside said P-well;~~

a frame shutter fabricated in said P-well, said frame shutter comprising a sample circuit for receiving charges from said photoreceptor and sampling charges from said photoreceptor on to a storage node; and

a readout circuit for receiving charges from said storage node and providing a readout signal, said readout circuit comprising an active pixel readout circuit in direct electrical connection to said sample circuit.

29. (Previously Presented) The integrated pixel sensor of Claim 28, wherein the sample circuit comprises an NMOS transistor for receiving said charges.

30. (Previously Presented) The integrated pixel sensor of Claim 28, wherein the photoreceptor is a pinned photodiode.